

CLAIMS

1. A radio communication apparatus comprising:
a plurality of antenna elements which are spatially
arranged away from each other;

5 means for acquisition of feedback information
included in signals transmitted from a communication end;
distributing means for distribution of phase
rotations, which said feedback information indicates,
to each of said antenna elements; and

10 transmitting means for diversity transmission
after phase rotations are added to each of signals
transmitted from said antenna elements, using said
distributed phase rotations.

15 2. A radio communication apparatus according to
claim 1, wherein said distributing means distributes
phase rotations so that there is smaller phase variance
in received signals at the side of a communication end
between before and after addition of said phase rotations.

20 3. A radio communication apparatus according to
claim 1, wherein said distributing means performs
weighting distribution of phase rotations to signals from
each antenna element according to amplitude variance
which are calculated in a communication end for each signal
transmitted from a plurality of said antenna elements.

25 4. A radio communication apparatus according to
claim 3, wherein said distributing means performs
weighting distribution so that the larger amplitude

variance cause the smaller phase rotations.

5. A radio communication apparatus according to claim 1, characterized in that said transmitting means gradually adds phase rotations to transmitting signals.

5 6. A radio communication apparatus comprising:

means for obtaining channel estimation values for signals from each antenna elements, using common known signals by radio transmission from a plurality of antenna elements provided in a transmission apparatus connected through a radio channel to a local apparatus;

means for calculation of feedback information based on said channel estimation values;

means for generation of information on distributed phase rotations after distribution of the phase rotations, which said feedback information indicates, to phase rotations for signals from each of said antenna elements; and

means for radio transmission of information on distributed phase rotations to said transmission apparatus.

7. A base station apparatus comprising a radio communication apparatus, wherein said radio communication apparatus has:

a plurality of antenna elements which are
25 spatially arranged away from each other;

means for acquisition of feedback information
included in signals transmitted from a communication end;

distributing means for distribution of phase rotations, which said feedback information indicates, to signals from each of said antenna elements; and

transmitting means for diversity transmission
5 after phase rotations are added to each of signals to
be transmitted from said antenna elements, using said
distributed phase rotations;

8. A communication apparatus comprising:

means for obtaining channel estimation values for
10 signals from each of said antenna elements, using common
known signals by radio transmission from a plurality of
antenna elements provided in a transmission apparatus
connected through a radio channel to a local apparatus;

means for calculation of feedback information based
15 on said channel estimation values:

means for generation of information on distributed phase rotations by distribution of the phase rotations, which said feedback information indicates, to phase rotations for signals from each of said antenna elements;

20 and

means for radio transmission of information on distributed phase rotations to said transmission apparatus.

9. A radio transmission method comprising the
25 steps of:

acquainting feedback information included in signals transmitted from a communication end;

- [illegible]